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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,291	09/09/2005	Taketoshi Toyama	3796.P0047US	4471
23474 7590 06/26/2008 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631				
EXAMINER WIESE, NOAH S				
ART UNIT 1793		PAPER NUMBER		
MAIL DATE 06/26/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/517,291

**Applicant(s)**

TOYAMA ET AL.

**Examiner**

NOAH S. WIESE

**Art Unit**

1793

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3 and 5-15 is/are pending in the application.
- 4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Status of Application***

1. Acknowledgement is made of amendments filed 02/19/2008. Upon entering the amendments, claim 1 is cancelled, claims 2-3 and 5 are amended, and claims 11-15 are added. Claims 6-10 are non-elected.
2. The claims 2-3, 5 and 11-15 are pending and presented for the examination.

***Applicant's Arguments***

3. Applicant's arguments filed 02/19/2008 have been fully considered and are persuasive at showing that the newly amended claims are distinct over the prior art used in the previous office action. In particular, because the newly amended claims include a limitation drawn to the molecular weights of the binder and the precipitation inhibitor, it is clear that these two agents are separate compounds. Because the amendments succeed at distinguishing the claims over the previous used art, new grounds of rejection are necessitated by amendment.

***New Grounds of Rejection Necessitated by Amendment***

4. Claims 2-3, 5, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al (US 6234381) in view of Morley et al (WO 2001/038040), Conn et al (US 5450666), and Harakawa et al (US 6099968).

Regarding **claims 2-3, 5, and 11-15**, as discussed in the previous office action, Hasegawa et al teaches a water-base binder and an aluminum brazing composition. The brazing composition comprises a flux (see claim 8) and a water-based organic binder that can be a copolymer of methacrylate and methacrylic acid (see claim 11). As

also discussed in the previous action, modifying the Hasegawa brazing composition to use the equivalent K-Zn-F-type flux would be obvious given the similarities of the compositions and the equivalence of the fluxes. Additionally, Hasegawa et al teaches that the brazing composition can contain silicon metal powder (see claim 9). Hasegawa teaches that the composition comprises an amino alcohol that would necessarily have a boiling point of 120-200°C (see previous office action).

The instant claims differ from Hasegawa because while Hasegawa teaches that the binder can be a (meth) acrylic acid / (meth) acrylate copolymer, it does not teach a separate component of this type of copolymer having a higher molecular weight. However, it would have been obvious to modify Hasegawa et al in view of Conn and Harakawa, because these references teach that separation control agents comprising this copolymer are known and advantageous for use in brazing-type compositions.

Conn et al teaches a composition for aluminum brazing comprising a flux and a xanthan material for preventing separation of the composition during storage (see Abstract, column 3, lines 39-45, and column 7, lines 40-45). The agent is present in the amount of 0.4-10 grams per liter of the composition (see claim 6). The teachings of Conn show that separation during storage is a problem in brazing compositions of the type taught by Hasegawa, and that the problem can be overcome by adding small amounts of additives. Harakawa et al teaches a metallic coating composition comprising a copolymer binder, a metallic flake pigment, and Primal ASE-60, which is a (meth) acrylic acid / (meth) acrylate copolymer thickener (see column 16, example 1). The Harakawa composition is of the type that could be used for brazing, in that it comprises

a metallic powder and is optimized for coating. Harakawa teaches that the thickener is present in a weight amount that would fall within the range of instant claim 11. The Harakawa teachings show that it was known in the art to use a (meth) acrylic acid / (meth) acrylate copolymer as an agent for controlling viscosity and separation, which is dependent on viscosity.

The teachings of Conn et al show that one of ordinary skill would have been motivated to add an agent for controlling separation in the brazing composition, because this was a well known problem at the time the invention was filed. One of ordinary skill would have been motivated to use the (meth) acrylic acid / (meth) acrylate copolymer taught by Harakawa as an equivalent agent because this is a specific commercial product easily obtained, and because it more closely matches the binder used in the Hasegawa composition. One would have expected reasonable success in these modifications because both Conn and Harakawa teach compositions that are of similar type as the Hasegawa composition, and thus no detrimental results would be expected. Routine experimentation and optimization of the amounts of agent taught by Conn and Harakawa would lead one of ordinary skill to an amount falling within the broad range of instant claim 11. Hasegawa does not specifically teach the molecular weight of the copolymer binder used. However, Primal ASE-60 is known to be a high molecular weight copolymer, and the Hasegawa binder would have a more ordinary weight to be functional. Thus it would be understood by one of ordinary skill that the additive used for viscosity modification and separation prevention would have a molecular weight much greater than that of the Hasegawa binder.

The teachings discussed above would, in combination, yield a composition meeting all of the compositional limitations of instant claims. Therefore, it necessarily follows that the composition would have a thixotropic index of 1.01-1.20. Thus, all of the limitations of instant claims are taught by the composition discussed above, and the claims are obvious and not patentably distinct over the prior art of record.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-3, 5, and 11-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The independent claim 11 states that "the weight average molecular weight of the copolymer in the emulsion is more than one digit greater than that of the copolymer of the organic binder". This language is ambiguous because a weight that is "one digit" greater than another weight could be interpreted in several different ways, such as by percent, order of magnitude, or simply one digit greater in the small given decimal. For clarity, an unambiguous term for the weight difference should be used, such as percent.

### ***Conclusion***

7. All the pending claims are rejected.

Applicant's arguments regarding the distinctness of the newly amended claims over the previously used prior art are persuasive, but the amended and new claims are

rejected under new ground necessitated by amendment. Therefore, **THIS ACTION IS MADE FINAL.**

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH S. WIESE whose telephone number is (571)270-3596. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jerry A Lorengo/  
Supervisory Patent Examiner, Art Unit 1793

Noah Wiese  
June 19<sup>th</sup>, 2008  
AU 1793